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EXAMINER

PATEL, S

ART UNIT

PAPER NUMBER

1624

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/529,096

Applicant(s)
Tatsuya Maruyama et al.

Examiner
Sudhaker Patel

Group Art Unit
1624



- ☐ Responsive to communication(s) filed on _____
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1035 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

- ☒ Claim(s) 1-8 _____ is/are pending in the application.
- Of the above, claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1-8 _____ is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claims _____ are subject to restriction or election requirement.

Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- ☐ All ☐ Some* ☒ None of the CERTIFIED copies of the priority documents have been
- ☒ received.
- ☐ received in Application No. (Series Code/Serial Number) _____
- ☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

- ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- ☒ Notice of References Cited, PTO-892
- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 3
- ☐ Interview Summary, PTO-413
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Notice of Informal Patent Application, PTO-152

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

Art Unit: 1624

DETAILED ACTION

Claims 1-8 are pending in this application.

Applicants' communication paper # 5 dated 11/22/00 is acknowledged.

Applicants' various arguments and remarks have been considered, and found persuasive.

Accordingly Group IV will not be subjected to further restriction as indicated in previous Office Action paper # 4 dated 10/27/00. This is because the additional time required for search would be within the reasonable time spent for the prosecution during the present Office Action.

Applicants have provisionally elected with traverse invention of Group IV, claims 1-8, drawn to compounds, compositions, and method of use for Formula (I) wherein $Z = CH$, and have also elected species of Examples 7 on page 37, Example 12 on page 38, and Example 41 on page 44. Since Claims 1-8 link with other groups of inventions, the same will be examined bearing in mind the subject matter, and species as elected by the applicants only. Affirmation of this election must be made by the applicants in replying to this Office Action.

The requirement is still deemed proper for non-elected subject matter, and is therefore made *FINAL*.

Improper Markush Rejection

Claims 1-8 are rejected under a judicially created doctrine as being drawn to an improper Markush group, that is, the claims lack unity of invention. The variables .Z, X, B, to gather with various values for other substituents are defined in a such a way that they keep changing the structure/core of the compound that determines the classification/subclassification. Additionally,

Art Unit: 1624

the physical properties e.g. solubility, melting point, appearance etc. are tremendously altered with the changing of the various variable as recited herein. By changing the values of these variables several patentably distinct and independent compounds are claimed.

In order to have unity of invention the compounds must have "a community of chemical or physical characteristics" which justify their inclusion in a common group, and that such inclusion is not repugnant to principles of scientific classification" In re Jones (CCPA) 74 USPQ 149 (see footnote 2). As already pointed out earlier, the structural formula (I) does not have a significant structural feature that is shared by all of its alternatives which is inventive. The structure has only a Formula (I) = Phenyl-CH(OH)-CH₂-NH-C(R1a)(R1b)-A-Phenyl-NH-CO- common. . This feature is not inventive. Compounds embraced by Formula (I) are so diverse in nature that a prior art anticipating a claim with respect to one member under 35 U.S.C. 102 would not render obvious the same claim under 35 U.S.C. 103. This is evidentiary of patentably distinct and independent inventions.

Limiting the claims to the elected group would overcome this rejection.

Claim Rejections - 35 U.S.C. § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Art Unit: 1624

Claims 1, and claims dependent on these claims, namely, claims 2-8 are rejected because while enabling as therapeutic agent for diabetes mellitus which comprises of the amide derivative or its salt according to claims 1-6 as an effective ingredient, does not reasonably provide enablement for compounds, composition based on heteroaryl ring = isothiazolopyridine, imidazopyridyl or oxobenzofuranyl etc. Whereas the claim language does not only include these cited compounds but many more compounds as represented by variables outlined in above mentioned Markush rejection in **Group IV** as elected, and rejected under 35 U.S.C. 112, paragraph one because the claims are open-ended, and broad.

In evaluating the enablement question, several factors are to be considered. In re Wands, 8 USPQ 2d 1400 (Fed. Cir. 1988); Ex parte Forman, 230 USPQ 546. The factors include: (1). The nature of invention; (2). the state of prior art; (3). the predictability or lack thereof in the art; (4). the amount of direction or guidance present; (5). the presence or absence of working examples; (6). the breadth of the claims, and (7). the quantity of experimentation needed

1). The nature of the invention: The claims are drawn to compounds, composition(s), a method(s) of making a pharmaceutical agent to be used as a therapeutic agent for diabetes mellitus.

2). The state of prior art: There are no known compounds of similar structure(s) which have been demonstrated to treat diabetes mellitus.

3). The predictability or lack thereof in the art: "predictability" have been demonstrated to be sufficiently lacking in the instant case for the instant method(s) claims which include (but not

Art Unit: 1624

limited to) making therapeutic agent for diabetes mellitus.

4). The amount of direction or guidance present and 5): There are no doses present for a method of preparing a therapeutic agent for diabetes mellitus.. Such utilities are unbelievable on their face and therefore they must be supported by sufficient evidence demonstrating such utilities. All available drugs to treat diabetes could only be used in a limited way.

6). The breadth of the claims: The claims are drawn to making either a pharmaceutical agent or a therapeutic agent for diabetes mellitus comprising the amide derivative or the salt thereof according to claims 1-6 as an effective ingredient.

7). The quantity of experimentation need would be an undue burden to one skilled in the pharmaceutical arts since there is inadequate guidance given to the skilled artisan for the many reasons stated above.

Claim Rejections - 35 U.S.C. § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Art Unit: 1624

Claims 1-8 are rejected under 35 U.S.C. 102(a) reference JP 10218861 which claims the application date of 2/4/1997. See also CAPLUS 1998:535771 pages 61-70.

Claim Rejections - 35 U.S.C. § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1, and claims dependent on these claims, 2-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schromm, Kurt et al. (DE 3743265) as applied to claims above, and further in view of Konosu Toshiyuki et al., "Triazol Antifungal", Chem. Pharm. Bull., 39/10,2581-9 (1991) also cited as CAPLUS 1992:26440.

Claims are drawn to generic Formula (I) of claim 1 wherein the core is very similar to main core of '265. The reference '265 teaches the making of compounds with generic core(s) encompassed by Claim 1 which are drawn to compounds of Formula (I) and others as instantly claimed.

The reference '265 (See Examples on pages 77-78) differ from the instantly claimed compounds by not having --CH(OH)-CH₂-NH- **CH₂-CH₂**-phenyl-NH-CO-CH₂-pyridine, but - CH(OH)-CH₂- NH- **C(Me)₂- CH₂-** phenyl-NH-CO-CH₂-pyridinium quat. (See Ex. On page 78) as claimed herein. However, the reference '265 is not limited in teaching of making of

Art Unit: 1624

compounds based on above generic core(s) only, but also teaches the use of the compounds as broncholytics i.e. use as pharmaceuticals as taught by the instant application.

The other reference Konosu, Toshiyuki et al. teaches making of compounds with a core also similar to instantly claimed compounds (see Formula I of CAPLUS pages 72-72). The reference has a core = Phenyl-CH(OH(heterocycle))-CH(Me)-NHC(O)-R₂ (R₂ = H, Ph, substituted Ph, furyl, thienyl etc.) which is very similar to instant Example 47 cited on page 71. The reference differs from the instantly claimed compound by having triazole in place of H, and R₂ (= -CH₂Ph) instead of -CH₂-heterocycle. The instant compounds' claims have eliminated the reference by defining B = a heteroaryl group which may be substituted and may be fused with a benzene ring. However, the specific main core Phenyl-C(H/het)(OH)-CH(H/Alkyl)-NH-CO- remains the same as claimed instantly herein.

However, the reference is not limited to teaching of making of a part of the molecule of the instantly claimed invention, but also teaches its use as antifungal agents. (see CAPLUS page 72), that is to say the ref. Compounds have ability to control or prevent growth of living organisms. However, the difference in structural synthesis could be overcome by the teaching of Kurt et al. '265 as cited above.

Thus, one having ordinary skill in the art would have been motivated to modify Formula (I) of ref '265 and try out combination of ref. Konosu by using/reacting Benzene- substituted with-CH(OH)-CH₂-NH-CH₂-CH₂-Ph-NH-CO-CH₂- with pyridine or other heterocycle for example, triazole, tetrazol or thiazole as used in the instantly claimed invention, and one would

Art Unit: 1624

have expected still to maintain &/or find out pharmaceutical/pharmacological activity either same or different than the reference '265. Hence, at the time of the invention was made, it would have been obvious to a person of ordinary skill in the art to prepare compounds and pharmaceutical compositions of the claimed Formula (I) by combining the 2 arts which were available.

This application has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicants' cooperation is, therefore, requested in promptly correcting any errors of which they may become aware in the specification.

Preliminary computer assisted search revealed references: U.S.P. 5541197. However, this reference do claim pharmacologically active compounds having hypolipidemic and hypoglycemic activities. These reference are also available on CAPLUS, MARPAT etc. The references are cited but not applied herein at this time.

Applicants are also requested to note that Application Serial #s 09297762;09514637, and others involving either one or more of the inventors, and similar subject matter to current application are located thru' preliminary search. These references are in transit and are not accessible to the examiner at this time. Applicants are advised to provide the information related to similar &/or presently pending local or international applications, if any, related to the subject matter included in the instant application to avoid various issues arising out of question of either double patenting &/or priority claims and other related matters.

Art Unit: 1624


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sudhaker Patel whose telephone number is (703) 308 4709. The examiner can normally be reached on Monday thru' Friday from 8:30 AM to 5:00 PM. If attempts to reach the examiner by the phone are unsuccessful, the examiner's supervisor, Mukund Shah can be reached at (703) 308 4716.

A facsimile center has been established for Group 1600. The hours of operation Monday through Friday, 8:45 AM to 4:45 PM. The telecopier numbers for accessing the facsimile machine are (703) 308-4556 or (703) 305-3592.

Any inquiry of general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308 1235.

sp

December 1, 2000.


Mukund Shah

Supervisory Patent Examiner

Art Unit 1624